

## **Abstract**

A frequency-adjustable oscillator suitable for digital signal clock synchronization comprises a crystal oscillator circuit for generating a driving signal and having a voltage-variable control input for adjusting a frequency of the driving signal, a phase detector circuit for generating a phase offset signal, a filter which operates on the phase offset signal to produce a VCO control signal, a voltage controlled oscillator circuit operably linked to the filter and responsive to the VCO control signal for generating an analog controlled-frequency signal, a frequency divider circuit for generating a reduced frequency feedback signal in response to the controlled-frequency signal. The frequency-adjustable oscillator also includes a double-sided package including a platform having a central portion and an outer portion with sidewalls extending substantially upwardly and substantially downwardly from the outer portion of the platform. The upwardly extending sidewalls and the platform form a first cavity adapted to receive and electrically connect the quartz resonator. The downwardly extending sidewalls and the platform forming a second cavity adapted to receive and electrically connect at least one electronic component. A cover is coupled with the first cavity to create an isolated environment for containing the quartz resonator.